



## Joint Engineering Team (JET) Virtual Meeting Minutes

National Coordination Office for Networking and Information Technology R&D (NCO/NITRD)  
490 L'Enfant Plaza SW, Suite 8001, Washington, DC 20024  
July 16, 2019, 12:00-2:00p.m. ET

### Participants

|                                  |                               |
|----------------------------------|-------------------------------|
| Nick Buraglio, ESnet             | Paul Love, NCO                |
| Rich Carlson, DOE/SC             | Michael Lambert, PSC/3ROX     |
| Bobby Cates, NASA/Ames           | Chris Lowe, USDA/REE          |
| Bill Fink, NASA/GSFC             | Joe Mambretti, StarLight/MREN |
| Julio Ibarra, AmLight/AMPATH/FIU | Linden Merer, NRL             |
| JJ Jamison, Juniper              | Mark Mutz, NOAA               |
| Ann Kean, NOAA                   | Anne Richeson, CenturyLink    |
| Jonah Keough, PNWGP/Pacific Wave | Kevin Thompson, NSF           |
| Kevin Kranacs, NASA/EOS          | George Uhl, NASA/GSFC         |
| Scott Kohlert, SCinet WAN/Ciena  |                               |

**Proceeding:** This meeting was chaired by Kevin Thompson (NSF) and Rich Carlson (DOE/SC).

### I. Action Items:

- Ongoing discussion of LSN's Strategic Plan and the JET role in it.
- ESnet update on its operational network security use of Rapid7.

**II. Review of the Minutes** of the June 2019 meeting: No corrections were offered during the meeting. (*Note:* None were received during the balance of the week).

### **III. Briefing on network plans for SC19** – Scott Kohlert (SCinet WAN/Ciena)

SC19 will be held in the Colorado Convention Center (CCC) in Denver, CO. The program runs from 17-22 November with the exhibits open 18-21. SCinet will build the world's fastest temporary network to support SC. Prestaging activities will be taking place at remote sites during August with staging at the CCC in the later part of October. Setup of the network will be done during the week before the conference. SCinet's plan is for a 400GE circuit from StarLight (Chicago, IL) to the CCC. This will be SCinet's first 400GE WAN circuit. There will be 100GE circuits to the CCC from Seattle, WA (2); Sunnyvale, CA (4); Los Angeles, CA (2); Dallas, TX (1); Miami, FL (2); Washington, DC (8 total from two locations); New York, NY (2); and Chicago (14). In addition to switched circuits, ESnet and Internet2 will provide layer 3 services (2x100GE each). Finally there will be two 10GE circuits for commodity traffic. Traffic from outside the US will come via TransPAC, SInet, PIREN, JGN, CERNET, CANARIE, AmLight, the ANA collaborative links to Europe, GÉANT, NetherLight, and SURFnet.

The SCinet WAN plan is contingent on the potential hardware and circuit donations occurring. This is especially true for the planned 400GE from StarLight to the CCC which is reliant on a network upgrade to permit the use of a flexible grid and higher baud rate transponders.

#### **IV. Operational network security roundtable** (only those who had comments were noted)

- A. ESnet: Nick Buraglio: ESnet is using Rapid7 for proactively looking at its internal networks. It is also taking the CEEs tools developed for ESnet6 and moving them into ESnet5.

#### **V. Networks Round Table**

- A. AmLight/AMPATH: Julio Ibarra:

- a. The Monet cable from Brazil (Santos/São Paulo and Fortaleza) to Boca Raton, FL, is being integrated into AMPATH. This will add 4x100GE to South America and is in addition to the existing 100GE ring around South America. One of the circuits over Monet will be dedicated to supporting the LSST observatory in Chile. Initially testing from preliminary instruments will run into 2020. In 2020 AmLight will connect to ESnet at 20G in Atlanta for a pilot to move LSST traffic to NCSA. AmLight will continue to support the other Chilean observatories and the South American NRENs.

- B. ESnet: Nick Buraglio:

- a. Work continues on ESnet6:
    - i. The optical RFP is completed. Best and Final is in progress. The announcement of the winning vendor should be made in October/November.
    - ii. Started the procurement of the Out-of-Band (OoB) platform. Since the OoB uses a cell connection if the cell system has a tower or repeater in the building where the OoB is located it needs to be validated that the cell connection does not use the same fiber as the ESnet equipment. Deployment should start as equipment becomes available. After extensive testing ESnet selected Opengear hardware for its OoB system.
    - iii. ESnet has issued a procurement request for the management plane routers.
    - iv. The writing of the packet equipment RFP is well along.

- b. ESnet has recently hired several new network engineers, infrastructure (Unix) engineers, project managers.

- C. NASA/EOS: Kevin Kranacs: no changes.

- D. NOAA: Mark Mutz: N-Wave's 100G upgrade is moving ahead. The Ciena Waveserver install in the DC area is complete. It is awaiting for scheduled maintenance windows to move traffic over. The 100G circuits on order from Internet2 are all ready to migrate to except the Denver, CO<> Atlanta, GA link. The 100G upgrade to NOAA's Fairmont, WV, data center is still in progress.

- E. NRL: Linden Mercer: Work on the connection through MAX to the Ciena test circuit to StarLight continues.

- F. USDA: Chris Lowe: Under the Office of the Chief Scientist the requirements for a pilot to evaluate a research network to support the science needs of all the component agencies.

## VI. Exchange Points Round Table

- A. NASA Ames: Bobby Cates: No significant changes this month.
- B. StarLight: Joe Mambretti
  - a. Last week KOREN engineers were on-site to install its fourth rack of equipment and upgraded its circuits.
  - b. StarLight (SL) is working with ESnet on its plans for ESnet6. SL has purchased five racks. SL is anticipating the initial management hardware in early August.
  - c. The Chicago Art Institute is one of several local organizations to purchase fiber to connect to SL.
  - d. SL is working on being ready for SC19.
    - i. SL has received a 400GE switch from Dell, one of the partners in the anticipated 400GE circuit from SL to SC19. SL is talking with several groups about using the circuit including NRL, GSFC, and ANL.
    - ii. SL had also been discussing with ANL a Data Challenge proposal.
    - iii. Additionally SL is preparing for DTN as a service at SC.
    - iv. Most of the items mentioned below for other conferences will also be demonstrated at SC.
  - e. For other conferences:
    - i. SL is preparing for a Data Mover Challenge for Supercomputing Asia using interlinked DTNs around the world (March 2020).
    - ii. SL will be supporting demonstration at the Global Research Platform Workshop (17-18 September at UCSD).

## VII. Update on the LSN's developing strategic plan – Rich Carlson

Rich summarized past discussions. No new tasks are being asked for. Rather the JET members are already coordinating these activities which continue. It is more a formalization of using things such as perfSONAR (pS) for getting performance data. Rich read the proposed paragraph describing the JET's support of the LSN's new strategic plan:

“The LSN JET coordinates operational aspects of multiple federal and non-federal research and education networks (RENs) within the United States.

While each network is owned and operated by an individual agency or academic institution, scientists and researchers at one institution typically use a workflow to access facilities and/or instruments at a remote location via the network. This creates a cross-domain challenge whereby the performance or behavior of any workflow is dependent on the operation of each individual network in addition to the peering between multiple networks. The RENs are actively developing new tools and mechanisms to monitor workflow behavior to ensure that their network is operating at peak efficiency. The JET will assist in tackling this cross-domain challenge by coordinating the development of these tools and the sharing of, possibly anonymized, performance data.”

Questions:

- Will there be something like a pS MaDDash linked off the JET's web page? This would be for the JET members to decide as part of the discussion on how to achieve the goals.
- What was intended by "possibly anonymized ... data"? For determination as this effort goes forward but do some addresses, such as those of DTN's need to be even partially anonymized as they do not belong to an individual and wouldn't compromise an individual.

The agreed to paragraph will be circulated to the JET's list with any comments due by COB on Friday, 19 July. (*Note*: No comments were received). The LSN expects to have a plan to share with the community in the fall. When it's available it'll be discussed at the following JET.

**Meetings of Interest 2019**

|                  |   |
|------------------|---|
| Sep 10-12        | DREN Technical Interchange Meeting, Moffett Field, CA                                 |
| Sep 17           | GLIF Americas Workshop, San Diego, CA   |
| Sep 17-20        | <a href="#">Global Research Platform Workshop &amp; GNA-G Meeting</a> , San Diego, CA |
| Sep 23-26        | <a href="#">NSF, NRP, and The Quilt – Workshops and Meetings</a> , Minneapolis, MN    |
| Oct 28-30        | <a href="#">NANO77</a> , Austin, TX   |
| Oct 30 – Nov 1   | <a href="#">ARIN 44</a> , Austin, TX  |
| Nov 16-22        | <a href="#">IETF 106</a> , Singapore  |
| Nov 17-22        | <a href="#">SC19</a> , Denver, CO   |
| Dec 9-12<br>2020 | <a href="#">TechEX19</a> , New Orleans, LA  |
| Jan 15-16        | <a href="#">HIC</a> , Hilo, HI  |

**Next JET meetings**

Aug 20, 2019 12-2 p.m. ET (This meeting will be virtual)

Sep 17, 2019 12-2 p.m. ET

n.b.: This meeting is the fall JET Face2Face for those working in or passing through the DC area. The meeting room will be available from 11:30 a.m. until 2:30 for conversation. Please feel free to bring something to eat.

Oct 15, 2019 12-2 p.m. ET

Nov 19, 2019 10 a.m. - 12 p.m. MT

n.b.: This meeting is concurrent with SC19. It will be held in room 711 of the Colorado Convention Center. Remote access is expected to be available.